

# Influence Of Gender on Employees Knowledge of Attitude Towards, and Perception of Smart Technology in The Workplace

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## Abstract

This paper examined the influence of gender on employees' attitude towards and perception of smart technology in the workplace. Data was collected using structured copies of questionnaire and the data were analyzed using descriptive statistic and inferential statistics. T-test was the statistical tools used for data analysis and the Statistical Package for Social Sciences (SPSS) version 21.0 was used. Results revealed that gender did not significantly influence knowledge of attitude towards and perception of smart technology;  $t(277) = 1.596, P > .05$ ,  $t(277) = 0.327, P > .05$ ,  $t(277) = 0.682, P > .05$  respectively. It was concluded that gender did not significantly influence employee's knowledge of attitude towards and perception of smart technology in the workplace. Therefore, it was recommended that the organization should train and re-train their employees especially the female gender so as to integrate them into the digital era and equip them adequately for effective use of smart technology.

*Keywords: Gender, Employees Knowledge, Attitude, Smart Technology*

## 1. Introduction

As the Industrial Age has transitioned into the Digital Age, the technology element of the smart workplace has developed even more rapidly (Ulukan, 2020). While smart Office' term has been commonly used by the academic world and industry, 'Digital Workplace' and 'Smart Workplace' concept or terminology has also started being used for describing 'digitally and technologically enhanced workplaces (Ulukan, 2020). This is mainly due to the breakthrough developments in the wireless and paperless communication technologies, digitalization of documents and processes, and developments in collaboration tools and technologies such as, high tech audio-visual tools, internet of things as well as intelligent systems & equipment such as Smart Building Management Systems, that control the building in a way to provide a functional and comfortable office environment, which in turn improves the employee experience (Ulukan, 2020). Utilization of these smart technological tools and equipment, together with the smart workplace principles led to the design of workplaces being transformed into digital or smart workplaces (Ulukan, 2020, Abdulrab, M.,2017).

Ulukan (2020) further describe smart workplace as a term, typically used to describe the workplace with a set of tools that are transforming towards a digital environment. Deloitte (2014) sees the Smart Workplace as - The digital workplace is defined as "all of the technologies that employees use to get work done in today's workplace, including both those that are currently in use and those that are yet to be deployed. Following this definition, they refer to tools & technologies such as HR and business applications, instant messaging through the use of electronic bulletin board and emails, social media and virtual meeting tools (Deloitte, 2014,Almaamari,2021).

Roberts (2015), broadens the definition of Smart Workplace to include the word "system" in the description, it is possible to describe a "holistic set of tools, platforms, and settings for work, delivering in a coherent, usable, and productive manner." In several research studies, authors such as (Bakar, Williams and Schubert, 2018) generally focused on the technological part of the digital workplace as some of the technology companies and software developers are using to describe their products or services such as IBM, Microsoft and many others (IBM, 2020). Therefore, Smart Workplace term may be confused with technology-based work platforms, products or services, in other words, the software and application-based solutions. Perhaps 'Smart Workplace' would be a better way of describing the technologically enhanced agile offices as it refers to the agility of the physical workplace, efficiency-driven processes and extensive use of smart and highly developed technology (Ulukan, 2020).

Smart technology, according to Bower (2019), is a technology that employs artificial intelligence, machine learning, and huge data processing to bring cognitive knowledge to previously inanimate objects. To look at it another way,

according to Poslad (2009), smart technology is defined as electronic equipment that can communicate with other devices or networks via wireless protocols such as Bluetooth, Zigbee (wireless fidelity), Wi-Fi (wireless fidelity), LiFi (low-power wireless), 3G (third generation), and 4G networks, and that can operate interactively and independently to a certain degree. The Internet of Things is made up of all modern artefacts that have been made smart with computational power and connected to the Internet (Poslad, 2009). They come in a number of varieties because they typically include a hardware layer (containing radio broadcasting indications), In addition to a network layer (which allows devices to communicate with one another), there is an application layer (that also allows end-user orders to be received) (Poslad, 2009).

However, regardless of which terminology is used, in a broader context, a smart workplace describes not only some high-tech tools or systems, but a holistic perception of flexible, adaptable, technologically enhanced work environments and processes that promotes productivity, collaboration and innovation (Ulukan, 2020).

While the workplace and smart technology were evolving and transforming into a new model, these developments have encouraged many businesses to start harnessing the benefits of smart workplaces. (Esses, 1998). Gartner's research one of the earliest comprehensive studies in this area pointed out that some of the multinational companies have already started transforming their offices in the late 1990s and early 2000s (Endesa, 2008). Smart technologies are now present in practically every facet of life, however they are frequently overlooked and accepted as normal by users. Recently, businesses have begun to integrate smart technology with the goal of improving customer experience and increasing efficiency (Endesa, 2008).

Smart technology is increasingly being used in a variety of service industries since it allows businesses to track customers, enhance productivity, and evaluate consumer behavior (Nachtwey, 2016). It appears that integrating smart tools in the workplace is now a trend, but it is always worth considering if those tools just act smart when it comes to their usage of new technology, or unless they also think smart from the standpoint of a possible user (Judge, 2009).

Technological assets are rapidly encouraging enterprises' absorptive ability, allowing them to accomplish greater goals on their own through organizational process. (Haddock and Zanna1993).This newfound ability to absorb information allows the company to develop software products that support the integration of information, attitudes, and perceptions across all of the company's processes, allowing it to be more adaptable in its organizational structure while also fostering innovation across the organization to improve its overall performance (Pushpa, 2019).

The use of technology was integrated into the manufacturing process. A company's ability to adapt to new technology has become essential (Nachtwey, 2016). When it comes to determining an organization's success, more than just profit is at stake. What a worker thinks of his superior can be inferred from his behavior (MacDonald, 2006).Organizational behavior and the adoption of new technology are both affected by factors such as Workplace culture, connections with managers and coworkers, job happiness, leadership styles, and incentive systems are all important factors to consider when hiring. (Pushpa, 2019). The employee performance is influenced by technology in the organization transforming the future of work and opening the door to a new generation of smart workplace (Beshr et al., 2023; Nachtwey, 2016).

However, the place of knowledge, attitude and perception in understanding smart technology cannot be underestimated. People's understandings of objects, concepts, beliefs, procedures, and the way things are done in the real world are referred to as knowledge (Ryle, 1949). In more specialized cases, it's known as expertise or know-how. When it comes to knowledge, Ryle (1949) made a distinction between the two. Knowing is how to do something and knowing how is to store information in one's head, these are two different things. Knowing derives from doing it yourself and teaching others how to do it as well. The greatest way to learn is to try a number of different things, see what works and what doesn't, reflect on what you've learned, and try again. (Ryle, 1949).

Knowledge can be classified as either explicit or tacit, according to Nonaka (1991) and Nonaka and Takeuchi (1995). Explicit knowledge can be formalized and codified; it can be stored in databases, business intranets, and intellectual property portfolios. People's minds include tacit knowledge. It's difficult to express in writing and comes from individual perspective (Nonaka, 1991). It encompasses scientific or technological knowledge, operational know-how, industrial insights, and commercial judgment (Hansen, 1999).

Instead of thinking of knowledge as something that people possess, it is wiser to think of it as something that people perform (Salama et al., 2020; Blackler, 1995). There are many kinds of knowledge: explicit and implicit, physical and mental, developing and static, spoken and encoded. Knowledge is varied and intricate,'he continued. Individuals or groups of people, according to Nonaka (1991), possess knowledge. Embodied or embraced knowledge is personalized and embedded, while cultural knowledge is collective, according to Blackler (1995). Scarborough and Carter (2000) argued that knowledge is transferred among members of a group or community through their collective work experience.

Organizations and people within organizations both have knowledge. Libraries, manuals and presentations as well as databanks are excellent places to find organizational operational and procedural knowledge (Wenger and Snyder, 2000).

As a result of their personal work experiences, people have valuable information (Boxall and Purcell 2000). Even if it is shared with their coworkers or even unofficially, If critical knowledge is retained in the heads of individuals or is transferred to another location if they leave the company, the organization may suffer a loss of competitive advantage (Boxall and Purcell 2000; Alkadash, & Alamarin, 2021).

Hansen, Nohria, and Tierney (1999)'s.Codification and personalisation are two strategies for implementing a knowledge management strategy that have been discovered. Tierney, Hansen, and Nohria (1999), submitted that, when

knowledge is systematically codified and stored in databases, it may be accessed and used at any time by anybody within the company, according to this codification technique. An explicit and formalized codification of information can be achieved through the use of people-to-document strategy (Hansen et al., 1999).

As a result, this method is document-based. Knowledge is removed from the individual who created it, separated from that person, and reused for a variety of purposes (Hansen et al., 1999). It will be maintained in an electronic repository that will allow a large number of people to search for and access codified knowledge without having to contact the person who originally developed it (Tierney, 1999).

Knowledge is either explicit or tacit, according to Nonaka (1991) and Nonaka and Takeuchi (1995). It is possible to codify explicit information. It is stored in databases, business intranets, and intellectual property portfolios and is recorded and accessible. People's minds contain tacit knowledge. Nonaka (1991), and Nonaka and Takeuchi (1995) describe it as "tough to define in paper" and "learned via personal experience." It encompasses scientific or technological understanding, resulted, industry insights, and commercial judgment, according to Hansen (1999). The most difficult aspect of knowledge management is converting tacit information to explicit knowledge (Hansen et al., 1999).

Further on other matter influencing factor of smart technology in the workplace is attitude. According to Buunk and Vugt (2008), attitude is a mental concept that is conveyed through a positive or negative judgment of a certain entity. This description is consistent with Roger (1983), who defines it as a long-term organization of an individual's thoughts about an item that predispose an individual his or her actions, which can be classed as "favourable or unfavourable attitude." An individual's overt responses to an object are guided (mediated) by their attitude, which is defined as a learnt implicit reaction that varies in strength (Fishbein, 1967). In Fishbein's view, attitude merely pertains to the appraisal of a notion, and every stimulus elicits a mediating evaluative reaction (Rothmann and Cooper, 2008).

According to Allport (1935), Attitude is a mental or neurological disposition that is organized by experience and has a direct or progressing impact on the individual's conduct in relation to all objects and situations with which it is related. On a simple note, attitude can be defined as a state of mind or a predisposition to respond in a particular way as a result of an individual's life experiences and personality traits. The direction of one's attitude is either toward or away from something (Leonfestinger, 2008). An attitude is a fictitious construct that indicates a person's level of like or disliking towards something. A person's attitude can be either positive or bad (Leonfestinger, 2008). Attitude is a mental and emotional respond that is organized via experience and has a dominating influence on a person's response to something (Leonfestinger, 2008).

According to Eagly and Chaiken (1993), an attitude is a psychological inclination expressed by appraising a specific entity with some degree of favorability or disapproval. The assumption that expressing an attitude entails the utterance of an overall evaluation about a stimulus item is implicit in this definition. To put it another way, reporting an attitude is choosing between favouring and disfavouring, accepting and unaccepting, or favoring and disfavouring a specific subject, object, or person (Eagly and Chaiken, 1993). An attitude can be categorized into two types when considered as an evaluative judgment. For starters, attitudes might differ depending on their valence or the direction in which they are expressed. Some people have good attitudes, while others have negative views, and yet others have neutral attitudes. Second, the strength of one's attitude can vary (Eagly and Chaiken, 1993). For example, one individual may feel strongly about a subject, whereas another may feel considerably less strongly about the same subject (Eagly and Chaiken, 1993).

Attitudes, on the other hand, might be viewed of as on in all assessment (e.g., favour–disfavour) of an attitude object (Robertson, 2015). A number of conceptual models of the attitude notion have emerged as a result of this definitional approach. Throughout history, it has been one of the most often used models for understanding attitudes. (Eagly and Chaiken, 1993; Zanna and Rempel, 1988). An attitude is a summation of an object's emotive, cognitive and behavioral components according to this perspective. Emotional responses to attitude objects are referred to as "affective" responses (Krosnick, 1992). There are many ways in which feelings influence attitudes; the most common is through affective reactions experienced by the individual after exposure to the attitude object. Many people, for example, claim that spiders frighten them (Krosnick, 1992). Poor emotional responses are more likely to result in a negative attitude regarding something (Krosnick, 1992).

Feelings and attitude items can be related in a variety of ways. Classical conditioning has been employed by a number of academics to examine how emotional input and an attitude object might influence a person's attitude. (Lynn, 1992). The cognitive component of attitudes means to believe, ideas, and traits that people identify with a certain item. (Jussim and Lynn 1992). In many circumstances, attitude of a person is essentially determined by weighing the positive and bad aspects of the attitude object. Many different sorts of attitudes are influenced by cognition (Jussim and Lynn, 1992).

Attitudes from a behavioral standpoint refer to previous behaviors made in respect to an object of attitude (Fishbein, 1975). If a person recalls signing a petition against the development of a nuclear power station in their area, they may conclude that they have a negative attitude about nuclear power plants. (Fishbein, 1975). Bem came up with the concept of people inferring their views based on their previous acts. According to Bem's (1972) self-perception theory, individuals are not always able to access their thoughts about various objects (Nisbett and Wilson, 1977). A person's attitude is more likely to be weak or uncertain, according to Bem (1972). Attitude can also impact strongly held beliefs, but in a different way. According to Festinger (1954), it is possible for people to change their beliefs so that they are more in line with their behaviors. People may persuade themselves that they enjoy multiple tedious chores if they are only paid a tiny sum to tell others that the tasks are fantastic (Festinger and Carlsmith, 1959).

Perception is indeed the process by which people evaluate and arrange stimuli in order to have a meaningful experience in the world (Lindsay and Norman, 1977). When a person is confronted with a scenario or stimuli, they are able to respond. The individual makes sense of the information he or she receives based on prior experiences (Assael, 1995). It is possible that one's impression of reality differs significantly from one's true beliefs (Assael, 1995). Perception is influenced by the degree to which a person is aware of and accepts input. Existing beliefs, attitudes, motivations, and personalities may limit a person's receptivity to new stimuli (Assael, 1995). Emotional anguish can be avoided by selecting stimuli that suit one's immediate needs (perceptual attentiveness) (Williams, 2008, Abdulrab, M.,2018).

Through the use of a filter model, Broadbent (1958) attempted to address the issue of perception attentiveness as a result of restricted processing capacity, a person's perceptual system processes just what it believes to be the most important facts when facts are presented through two independent channels (i.e., modalities of delivery such as visual and aural). (Broadbent, 1958). When external input opposes the people's present thoughts, attitudes, motivation, and so on, perception defense develops an inner problem which reduce the quantity of outer input that passes via the perception process. Selective perception is the term for this (Broadbent, 1958). It is possible for an individual to limit his or her ability to process external stimuli by selective interpretation of what he or she sees. (Sherif and Cantril, 1945). Perception can be seen as the psychological process occurring in the brain of people leading to the organization and interpretation of information received from the environment (Williams, 2008).

However, the place of Gender in understanding knowledge of, attitude towards and perception of smart technology cannot be overemphasized. The Food and Agriculture Organization defines gender as "the perceptual and material links between men and women." An individual's marital status is the state of his or her marriage. According to Wilson, (2002) The term "gender" refers to whether an individual is genetically and biologically male or female. Research in the information and communication industry has shown that the gender of users affects various decision-making processes, such as information search and technology acceptance, thus emphasizing the importance of gender to organizations today (Kim and Kim 2019, Ahuja and Thatcher, 2005). Understanding gender and its role has been an important task in technological systems. Numerous research has investigated how gender influence areas such as feedback utilization (Djamasbi and Loiacono, 2008), IT adoption (Venkatesh and Morris, 2000), and blogger switching behavior (Zhang et al., 2009).

### *1.1. Problem Statement*

Smart technology has brought a range of benefits to many organizations, including long-term competitive advantages and decreased manufacturing and laboru costs. As a result, the value of the product and services increases, and the business process as a whole improves (Nguyen, Newby and Macaulay 2013). Despite the benefits of smart technology in the workplace today, users are still not knowledgeable when it comes to the aspect of its usefulness. Users ought to embrace smart technology and have full knowledge of it for effective running of business (Aubert, Barki, Patry and Roy, 2008).

Dulebohn (2003) stated that employee's opposition may arise because of distrust, the feeling of being controlled and fear of unknown. Meanwhile many multinational companies invested hugely to acquire and maintain smart technology, despite this huge investment, the attitude of employee is still not in support as a result of inability to operate the smart technology.

Many technological and multinational companies are now implementing the smart workplace designs and standards. Some industries however have not shown the same level of willingness to implement the new smart workplace concept due to various reasons. Among these reasons are the poor knowledge of smart technology, negative attitude towards technology and poor perception of smart technology. These reasons notwithstanding, a large number of companies are now realizing the benefits of the smart technology in the workplace, because it is linked with corporate responsibilities and ideals such as sustainability, environment, productivity and profitability (Fullan, 2012).

In light of the above, the main purpose of this research is to examine employees' knowledge of, attitude towards and perception of smart technology in manufacturing industry in Ogun State. Also, the study intends to analyze the role of gender in implementing smart technology in the workplace.

### *1.2. Objective of the Study*

The study's main purpose is to investigate the influence of gender on employees' knowledge of, attitude towards and perception of smart technology in manufacturing industry in Ogun State. The specific objectives are to:

- Examine the influence of gender on employees' knowledge of, attitude towards and perception of smart technology in manufacturing industry.

### *1.3. Research Hypotheses*

- H1: Gender would significantly influence employees' knowledge of attitude towards and perception of smart technology in manufacturing industry.

#### 1.4. *Scope of the Study*

The study tends to examine the influence of gender on employees' knowledge of, attitude towards and perception of smart technology in manufacturing industry in Ogun State Nigeria. The researcher collected data from employees in selected manufacturing industry in Agbara Industrial Estate. Although there are many industries in Agbara, and also the two industries have branches across Nigeria, but the scope of this study only covers the direct employees of Nestle Nig. Plc and Unilever Nig. Plc, Agbara Industrial Estate. Paucity of fund and unavailability of time are responsible for these limitations. This research work was limited to the study of influence of gender on employees' knowledge of, attitude towards and perception of smart technology taking other variables as constant.

#### 1.5. *Significance of the Study*

The study provides management with a variety of data on employee behavior, inter-personal relationships, and performance in connection to technology in the smart workplace. This research assisted manufacturing companies in deciding whether or not to adopt a new technology and in providing training to their personnel on how to use it. The result of this study helps to ascertain the overall suitability or otherwise of the current technology usage in Nigerian manufacturing industries. The research added to the pool of knowledge in the field of human resource, technology use and behavior in generally.

## 2. **Literature Review**

Smart Technology entails self-monitoring, analysis, and reporting technology (Kietzmann and Kristopher, 2011). In order to provide cognitive awareness to objects, the internet of things, artificial intelligence, machine learning, and big data all play a role in this technology. (Bower,2019). Smart devices like sensors are used in this workplace technology to accumulate, adapt, and communicate information about items and the environment, making the monitoring process frictionless and self-governed. Smart technology, according to Bower (2019), is a technology that uses artificial intelligence, machine learning, and large-data processing to bring cognitive knowledge to previously inanimate objects.

### 2.1. *Smart Technological Tools*

Chua identifies some smart technological tools for workplace; they include mobile, cloud, social collaboration, digital service delivery, big data, payment systems, cyber security, robotics, augmented and virtual reality, and artificial intelligence (2013).

- **Mobility:** This gives firms and their employees access to communication and information anytime and anywhere they need it. Increasingly, our personal and professional lives are intertwined, with new tablet and smart phone manifestations such phone pads and phablets promising to further blur the distinctions between work and personal life, as well as geographical limits (Chua, 2013).
- **Cloud:** After linking millions of computers, the internet evolved into a cloud of interactive computing platforms (Chua, 2013). It can provide IT resources (such as software, computer power, and data storage) on demand. These resources can be scaled up or down to match demand, and they are accessible via fixed and mobile devices. As a result, corporations are creating their own "private clouds" that may be used in conjunction with public cloud services to meet peak demand.
- **Social Collaboration:** In this way, businesses and industries can use social media platforms to create, share, and exchange information and ideas. Blogging, crowdsourcing, instant messaging, internet telephony, and sharing images and music become popular personal communication and collaboration tools. Then enterprises, governments, charities, and other organizations adopted them to increase internal and external communication and collaboration (Chua, 2013,Almaamari,2021).
- **Digital Service Delivery:** In handling initial questions and support requests via email, chat bots (artificial intelligence) can provide interactive live chat from websites and portals and communicate via social media channels such as Facebook and Twitter.
- **Payment System:** As a result, the internet has become a trade platform and a trading hub, reshaping global payment networks (Chua, 2013). Cheques and cash deposits are gone, as is the use of credit and debit cards. This has been driven by the advent of electronic banking and its multitude of supporting payment platforms. Statutory payments must increasingly be performed electronically, mobile payment possibilities are rising, and businesses and customers have numerous options for paying for goods and services.
- **Cyber Security:** As the number of individuals who use the internet has increased, solutions for managing cyber security and protecting against intentional assaults and data loss have become more widely available and affordable. Those in jeopardy have raised their spending on cyber security and developed policies and processes, but these must be evaluated on a regular basis to ensure that they are effective against evolving threats (Chua, 2013). Because products and services are increasingly being supplied, sourced, and accessed

online, safeguarding sensitive personal and company data and systems is vital to ensuring that operations and reputations are not jeopardized (Chua, 2013). Digital information theft has eclipsed physical theft as the most commonly reported fraud, and new research reveals that small and medium-sized firms are becoming a key target for cyberattacks due to their relative vulnerability (Chua, 2013, Al-Maamari, Q. A.,2020,Almaamari,2022).

- **Robot:** Sensors, control systems, manipulators, power supply, and software make up a robot (Chua, 2013). It can move, detect, absorb information, and make judgments. It can run on a battery, light, energy, or biofuel. In addition to work that requires precision and uniformity of standards, many companies are developing and deploying robots to undertake boring, risky, or demanding tasks.

## 2.2. Gender

Previously, 'Sex' was the only word used to describe the physical bodies of both males and females as well as the different social roles played by men and women. However, later on it has been found that the word Sex is not adequate to describe the many ways in which human beings express themselves, their behavior in culture their attitude towards technology and their social environment. Gender refers to the social qualities and opportunities associated with male or female gender, as well as the relationships between women and men, girls and boys, and women and men (Krieger, 2003).

These features, opportunities, and connections are socially constructed and acquired through the process of socialization, and they are context/time-dependent and dynamic (Krieger, 2003). In a given setting, gender equality means what is expected, allowed, and valued in a woman or a man. In most areas, there exist variations and inequalities in decision-making possibilities, duties allocated, activities conducted, and access to resource control between men and women (Krieger, 2003, Al-Tahitah, A.,2018).

## 3. Theoretical Review

### 3.1. Technology Acceptance Model

Davis (1989) propounded the Technology Acceptance Model (TAM) idea. The perceived usefulness and perceived ease of use are two cognitive assumptions held by the TAM. According to the hypothesis, the user's behavioural objectives, attitude, perceived utility, and the system's perceived simplicity of usage all influence the adoption of technology. In this sense, the theory places a greater emphasis on the key elements that influence technology acceptance and utilization. According to Davis (1989), perceived utility refers to people's opinion that a certain technology may help them do their jobs better. Furthermore, according to Davis (1989:320), the use of most tools and processes can benefit both the organization and the individual. The third TAM construct, according to Davis (1989), is perceived ease of use, which refers to how much people believe that using a system would help them do their jobs irrespective of their gender. This means that implementing technology solutions will make both male and female jobs easier and less stressful. According to Bradley (2019), perceived usefulness stems from people's acceptance of technology and its ability to increase work performance. In this aspect, the perceived utility of technology is largely determined by the utility of its application. For example, if librarians and other knowledge resources staff at universities believe that technology is useful and advantageous to their profession, they are more inclined to accept it. Bradley (2009) claims that librarians will find it much easier to use new systems in the library environment in order to demonstrate perceived ease of use. This concept has gained a lot of momentum and is still being utilized to improve the performance of numerous organizations. In this context, numerous technological instruments like as software and the internet have been deemed to be quite beneficial for knowledge management.

## 4. Empirical Review

### 4.1. Gender and Smart Technology in the Workplace

The important investigation of Van Slyke et al., (2002) has also established that, men are more likely to try a new thing and/or technology in comparison with women. As concluded by Braak (2004), males felt more confident with computers than females did. Furthermore, women and men were found to have different perceptions towards communication technologies such as email (Phillip and Suri, 2004). Conversely, Bigne et al. (2005) reported no significant difference between males and females in using mobile technology in internet-related activities in Spain. In the same way, Serenko et al. (2006) found that male and female users follow a similar pattern in forming beliefs about new information technologies.

Sanchez-Franco (2006) provided in-depth analysis of how men and women differ in their web acceptance and usage processes. Similarly, Ong and Lai (2006) examined differences between males and females in relation to perceptions and relationships among factors affecting e-learning acceptance. The findings indicated that males' perceived usefulness, perceived ease of use, and behavioral intention to use e-learning were all higher than females. Also, females were found

to be more affected by perceptions of computer self-efficacy and ease of use (Ong and Lai, 2006). They also noted that males' use decisions were more influenced by their perception of usefulness of smart technology

Orji (2010) found that the differences between the men and women have been studied in various areas such as electronic mail, information retrieval, e-learning, communication technologies and online purchasing behaviour and majorly, the studies revealed more favorably towards men as compared to women. The author has suggested that understanding the reasons behind gender inequalities on the acceptance of new technologies would help in overall development of technologies.

## 5. Methodology

This research focuses on the variables of knowledge of, attitudes towards and perception of smart technology with the influence of gender in Selected Industries which are located in Agbara industrial Estate in Ogun State Nigeria. The study was full survey in which Ex Post Facto design was adopted. The independent variable of the study is gender while the dependent variables are knowledge of smart technology, attitude towards smart technology and perception of smart technology. The target population for this study comprises of full-time employees of Nestle Nig. Plc and Unilever Nig. Plc Agbara Industrial Estate, Ogun State Nigeria. This study comprises of the entire male and female, low level, middle level, and high-level manpower staff in Agbara branch of the selected industries. The study sample was selected using a simple random sampling technique in which each unit of the population has an equal probability of being selected. A self-structured questionnaire was developed and validated by experts in human resources development. This was based on the assertion of (Nunnally, 1978), he reported that, using expert approach to achieve content validity is an acceptable method. Descriptive and inferential statistics were used to analyze the data collected. T-test was used to test the stated hypothesis, Statistical Package for Social Sciences version 21.0 was used for data analysis.

## 6. Hypotheses Testing

### 6.1. Hypothesis 1

Gender would significantly influence employee's knowledge of attitude towards and perception of smart technology in the manufacturing industry.

**Table 1.** A Summary Table of T-test for Independent Measures Showing the Influence of Gender On employee's knowledge of smart technology in the manufacturing industry

	Gender	N	$\bar{X}$	SD	DF	T	P
KNOWLEDGE OF SMART TECHNOLOGY	Male	210	71.48	5.821	277	1.596	>.05
	Female	69	70.17	6.061			
ATTITUDE TOWARDS SMART TECHNOLOGY	Male	224	35.81	4.782	277	.327	>.05
	Female	73	35.60	4.713			
PERCEPTION OF SMART TECHNOLOGY	Male	224	50.54	13.016	277	.682	>.05
	Female	73	49.38	11.106			

Source: Authors' Fieldwork, 2021

The result stated in table 2 revealed that gender did not significantly influenced knowledge of smart technology {t (277) = 1.596, P> .05}. This indicated that male employees were not significantly different from female employees on knowledge of smart technology

The result also revealed that gender did not also significantly influenced attitude towards smart technology {t (277) = 0.327, P> .05}. This indicated that male employees were not significantly different from female employees on attitude towards smart technology

Finally, that gender did not significantly influence perception of smart technology {t (277) = 0.682, P> .05}. This indicated that male employees were not significantly different from female employees on perception of smart technology.

## 7. Discussion

The research aimed at evaluating the influence of gender on employees' knowledge of, attitude towards and perception of smart technology in manufacturing industries in Ogun State, Nigerian. The hypothesis stated that gender would significantly influence employees' knowledge of attitude towards and perception of smart technology in

manufacturing industry. The results showed that there was no significant influence of gender on knowledge of, attitude towards and perception of smart technology in manufacturing industries.

This result was supported by the study of Ong and Lai (2006) they explore differences that exist between men and women attitudes towards smart technology in relation to perceptions and relationships among factors affecting technology acceptance. Their findings indicated that men are more knowledgeable and perceived usefulness and perceived ease of use in relation to their behavioral intention to use of smart technology in the workplace were tremendously higher than their women counterpart in the workplace'. Furthermore, on their assertion, they reported that women were seen to be more affected by perceptions of computer self-efficacy and ease of use (Ong and Lai, 2006). They also noted that men's use decisions were more influenced by their perception of usefulness of smart technology. On closer study, it emerged that males put more emphasis on the convenience derived from the use of mobile payments than do their female counterparts. In a study by Shao, Zhang, Li and Guo (2019), which analyzed the moderating effect of gender on mobile payment platforms in the workplace, it was found that the influence of security and customization on trust was greater for women than for men. In addition, the influence of mobility and reputation on trust was found to have a greater effect on men than women. In a study by Chawla and Joshi (2020) regarding the acceptance of mobile wallets, the influence of facilitating conditions and security on attitudes was found to be greater in male users than in female users.

## 8. Conclusion and Recommendation

The study's findings lead it to the conclusion that, gender did not significantly influence employees' knowledge of attitude towards and perception of smart technology in the workplace. Based on the result of the findings, it shows that male employees were more knowledgeable than their female counterpart, furthermore, the findings of the study reveal that male employees portray positive attitudes towards smart technology in the workplace compared to their female counterpart. Finally, the male employees perceived smart technology to be more useful in the workplace than their female counterpart. Generally, the results show that male employees find smart technology to be more useful than the female employees in the workplace. However, on this note, it was recommended that the awareness of smart technology and its benefits should be well communicated to the female gender in the workplace. And also, the organization should train and re-train their employees especially the female gender so as to integrate them into the digital era and equip them adequately for effective use of smart technology.

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